THEREFORE WHAT IS CLAIMED IS:

1. A layered structure including a fullerene layer exhibiting Ohmic behavior, comprising:

a) a first layer comprising fullerenes, said first layer having a first surface and a second surface opposed to the first surface;

b) a second layer of pre-selected thickness comprising a fluoride compound located on said first surface of said first layer comprising fullerenes; and

c) a third layer comprising an electrically conductive material located on the second layer, the pre-selected thickness of the second layer being selected so that the layered structure exhibits substantially Ohmic behavior across the first, second and third layers.

2. The layered structure according to claim 1 wherein said fullerenes are selected from the group consisting of C60, C70 and combinations thereof.

3. The layered structure according to claim 1 wherein said fluoride compound is an alkaline fluoride compound.

4. The layered structure according to claim 3 wherein said alkaline fluoride compound is lithium fluoride (LiF).

5. The layered structure according to claim 4 wherein said pre-selected thickness of the lithium fluoride layer is in a range from about 0.2 nm to about 5 nm.

6. The layered structure according to claim 1 wherein said electrically conductive material is selected from the group consisting of Al, Cr, Cu, Ag, Au, Ni, Fe, Ni, W, Mo, Co and alloys or mixtures of Mg:Ag and Li:Al.

7. The layered structure according to claim 1 wherein said electrically conductive material is aluminum (Al).

8. The layered structure according to claim 1 wherein the second surface of the layer comprising fullerenes is physically contacted to a surface of a substrate for making electrical contact between the layered structure and the substrate.

9. The layered structure according to claim 1 wherein said layer comprising fullerenes includes one of a mixture of fullerenes and organic molecules, a mixture of fullerenes and inorganic materials, polymeric fullerenes, and fullerenes chemically bonded to conducting polymers.

10. A layered structure including a fullerene layer exhibiting Ohmic behavior, comprising:

a) a first layer comprising fullerenes, said first layer having a first surface

and a second surface opposed to the first surface;

b) a second layer comprising a low work function material located on said first surface of said layer comprising fullerenes; and

c) a third layer comprising an electrically conductive material located on the second layer, the low work function material being selected so that the layered structure exhibits substantially Ohmic behavior across the first, second and third layers.

11. The layered structure according to claim 10 wherein said fullerenes are selected from the group consisting of C60, C70 and combinations thereof.

12. The layered structure according to claim 10 wherein said electrically conductive material is selected from the group consisting of Al, Cr, Cu, Ag, Au, Ni, Fe, Ni, W, Mo, Co and alloys or mixtures of Mg:Ag and Li:Al.

13. The layered structure according to claim 10 wherein the second surface of the layer comprising fullerenes is physically contacted to a surface of a substrate for making electrical contact between the layered structure and the substrate.

14. The layered structure according to claim 10 wherein said layer comprising fullerenes includes one of a mixture of fullerenes and organic molecules, a mixture of fullerenes and inorganic materials, polymeric fullerenes, and fullerenes chemically bonded to conducting polymers.

15. A light-emitting device, comprising:

a) a substrate;

b) an first electrically conductive layer defining an anode electrode layer on the substrate;

c) an electron transport layer comprising fullerenes;

d) a second electrically conductive layer defining a cathode electrode layer on the electron transport layer; and

e) a layer of a light emissive material located between the anode electrode layer and the electron transport layer.

16. The light-emitting device of claim 15 including a hole transport layer located between the anode electrode layer and the light emissive material.

17. The light-emitting device of claim 16 wherein said hole transport layer is comprised of organic molecules which conduct holes.

18. The light-emitting device of claim 16 wherein said hole transport layer has a thickness in a range from about 1 nm to about 300 nm.

19. The light-emitting device according to claim 15 wherein said second electrically conductive layer defining a cathode electrode layer is selected from the group consisting of Al, Cr, Cu, Ag, Au, Ni, Fe, Ni, W, Mo, Co and alloys or metal mixtures.

20. The light-emitting device of claim 19 wherein said alloy or mixture is a Mg:Ag or Li:Al alloy or mixture.

21. The light-emitting device of claim 15 including an interfacial layer interposed between the electron transport layer and said electrically conductive layer defining a cathode electrode, said interfacial layer comprising a fluoride compound.

22. The light-emitting device of claim 21 wherein said interfacial layer comprising a fluoride compound has a thickness in a range from about 0.2 nm to about 10 nm.

23. The light-emitting device of claim 21 wherein said fluoride compound is an alkaline fluoride compound.

24. The light-emitting device of claim 23 wherein said alkaline fluoride compound is lithium fluoride (LiF).

25. The light-emitting device of claim 22 wherein said fluoride compound is calcium fluoride (CaF_2).

26. The light-emitting device of claim 21 wherein said second electrically conductive layer defining a cathode electrode layer is aluminum (Al).

27. The light-emitting device of claim 15 including an interfacial layer interposed between the electron transport layer, and said second electrically conductive layer defining a cathode electrode, said interfacial layer comprising a low work function metal or alloy.

28. The light-emitting device of claim 27 wherein said low work function metal or alloy is selected from the group consisting of calcium (Ca), magnesium (Mg), and alloys of Mg:Ag and Li:Al.

29. The light-emitting device of claim 27 wherein said second electrically conductive layer defining a cathode electrode layer is aluminum.

30. The light-emitting device of claim 15 wherein said fullerenes are selected from the group consisting of C60, C70 and combinations thereof.

31. The light-emitting device of claim 15 wherein said electron transport layer includes an organic molecule or polymer which are electron conductors mixed with said fullerenes.

32. The light-emitting device of claim 31 wherein said organic molecule is tris-(8-hydroxyquinoline) aluminum (Alq), and wherein said fullerenes are selected from the group consisting of C60, C70 and combinations thereof.

33. The light-emitting device of claim 15 wherein said electron transport layer includes lithium fluoride (LiF) mixed with said fullerenes.

34. The light-emitting device of claim 15 wherein said electron transport layer includes metal particles mixed with said fullerenes.

35. The light-emitting device of claim 34 wherein said metal particles are silver metal particles.

36. The light-emitting device of claim 15 wherein said electron transport layer has a thickness in a range from about 1 nm to about 300 nm.

37. The light-emitting device of claim 15 wherein the electron transport layer comprising fullerenes has a thickness selected to produce pre-selected optical interference to generate multiple colors, colors of desired wavelength, and optimum optical power output.

38. The light-emitting device of claim 15 including a lithium fluoride (LiF) layer of thickness from about 0.2nm to about 3nm located between the electron transport layer comprising fullerenes and the layer including a light emissive material.

39. The light-emitting device of claim 15 including a layer of organic molecules

with a LUMO energy level of about 2eV to about 3eV and HOMO energy of about 5 eV to about 7eV located between the electron transport layer comprising fullerenes and the layer including a light-emissive material.

40. The light-emitting device of claim 39 wherein the organic molecules are selected from the group consisting of 4,4 '-bis(carbazol-9-yl)-biphenyl; 2,9-dimethyl-4,7-diphenyl-1,10-phenanthroline; 1,3-Bis(5-(4-diphenylamino)phenyl-1,3,4-oxadiazol-2-yl)benzene; 3,4,5-Triphenyl-1,2,4-triazole; 3-(Biphenyl-4-yl)-4-phenyl-5-tert-butylphenyl-1,2,4- triazole; 3,5-Bis(4-tert-butylphenyl)-4-phenyl-[1,2,4]triazole; 2-(4-Biphenylyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole; 1,3-Bis[5-(4-(1,1-dimethylethyl)phenyl)-1,3,4-oxadiazol-2-yl]benzene; 1,4-Bis(5-(4-diphenylamino)phenyl-1,3,4-oxadiazol-2-yl)benzene; and 1,3.5-Tris[5-(4-(1,1-dimethylethyl)phenyl)-1,3,4-oxadiazol-2-yl]benzene.

41. The light-emitting device of claim 15 wherein the first electrically conductive layer defining an anode electrode layer on the substrate is a high work function material.

42. The light-emitting device of claim 41 wherein the high work function material is selected from the group consisting of ITO, SnO2, Ni, Pt, Au, p++ semiconductors including c-Si, a-Si, a-Si:H, and poly silicon.

43. The light-emitting device of claim 15 including a protective coating

deposited on a top surface of the electrically conductive layer defining the cathode electrode.

44. The light-emitting device of claim 43 wherein said protective coating is selected from the group consisting of dielectrics including oxides of Si and nitrides.

45. The light-emitting device of claim 44 wherein said protective coating is a fullerene layer.

46. The light-emitting device of claim 15 including a power supply for applying a voltage across the anode electrode layer and the cathode electrode layer.